Executive and Administrative Organization

By J. E. Otterson
President, Winchester Repeating Arms Company, New Haven, Conn.

IN discussing the subject of executive and administrative organization, it seems desirable to treat it in such general terms as will permit of its universal consideration without reference to its professional or industrial application to a particular undertaking or activity.

Let us consider first and broadly the problem of management. This subject may be considered under three heads:

Organization
System
Administration

Organization is the division of the work to be done into defined tasks and the assignment of those tasks to individuals qualified by training and natural characteristics for their efficient accomplishment.

System is the method pursued by the organization in carrying out its tasks and is the mechanism or process of management by which the efforts of the organization are standardized and unified.

Administration is the routine work of the organization in operating the management mechanism or system.

We must of necessity have an effective organization, system and administration and an effective coördination of the three to produce effective management or management control.

Organization deals with the qualifications and characteristics of human beings and is consequently deeply psychological. System deals with the methods of performance and should be scientific. Administration deals with the performance itself and should be the application of a psychologically correct organization to the execution of scientific methods of performance.

It is essential that the organization fit the system and the system fit the organization. You can kill the finest organization in the world by forcing upon it a system that it is not qualified to operate, and similarly, you can kill the finest system in the world with an organization of incompetent, inefficient men, or men

improperly selected or improperly assigned. You cannot make a success of any system with incompetent men. You can make a partial success of any system with competent men.

A competent organization will make up for many weaknesses in system and we can afford, therefore, not to be arbitrary in the matter of system, but let both the organization and the system be adapted to each other. The refinement and development of the one should keep pace with the refinement and development of the other.

Our concern for the moment is with the subject of organization rather than with the subject of system, and we are concerned with administration in its relation to organization and to the extent that it grows out of organization. Let us proceed then to the development of the principles of organization, approaching it with a psychological viewpoint and considering first the classification of individuals for organization purposes.

Men are of two broad general types, namely: the engineering type and the executive type.

The engineering type of man works for the solution of a single technical or engineering problem and is concerned with the determination of the solution rather than the application of that solution to practical activities. The true type has the capacity to concentrate continuously on a single problem until the solution has been reached. He is interested in the determination of cause and effect and of the laws that govern phenomena. He is disposed to be logical, analytical, studious, synthetical and to have an investigating turn of mind. The predominating characteristic that distinguishes him from the executive is his ability to concentrate on one problem to the exclusion of others for a protracted period, to become absorbed in that problem and to free his mind of the cares of other problems. He does not submit readily to the routine performance of a given quantity of work. He deals with laws and abstract facts. He works from text books and original sources of information. Such men are Edison, Steinmetz, the Wright brothers, Curtiss, Bell, Pupine, Fessenden, Browning. These men are the extreme of the engineering type, they have enormous imagination, initiative, constructive powers. Mr. Taylor was in reality an engineer rather than an executive. He applied his wonderful inventive genius to the invention of management methods.

The executive type takes the conclusions of the engineer and the laws developed by the engineer and applies them to the multitude of practical problems that come before him. His chief characteristic is that he works with a multitude of constantly changing problems at one time. He concentrates on one problem after another in rapid succession. In many instances he has not the time to obtain all of the facts and he must arrive at a conclusion or make a decision based upon partial knowledge. He must rapidly assimilate available facts and fill in what is lacking from the ripeness of his own experience, frequently calling upon his powers of judgment, and even of intuition. He is a man of action, boldness, ingenuity, force, determination, aggressiveness, courage, decision; he is possessed with the desire to get things done, impatient of delay. He works from a handbook, a newspaper, or nothing at all. Such men are Schwab, Goethals, Pershing, Farrell, Hindenburg, Hoover.

We frequently find that the leaders of either of these classifications possess something of the qualities of both and therefore we have executive engineers and engineering executives. The combination of a high order of ability in these two classes in a single individual is rare and valuable.

Modern industry grew out of the inspiration and inventive genius of the engineer and has in turn created a demand for the engineering type that has led to the establishment of courses of training for engineers in our schools and colleges. The demand for executives grows out of the growth and increasing complexity of modern organizations. In small and simple organizations the demand for the executive as a type is not so apparent, but when the organization grows in size or complexity to the point where its operation is not within the vision or capacity of a single individual it becomes necessary to operate such an organization by the processes characteristic of the true executive, wherein accomplishment is brought about not so much through personal effort as through the direction of others coöperating in large numbers.

Modern industry and social organizations have not as yet provided adequate means for the systematic training of executives, and the executive usually grows out of the engineer by virtue of his natural characteristics and talents, developed and stimulated by his experience. As a result there are many potential execu-

tives eating their hearts out and wasting their time in uncongenial application to pure engineering effort. I believe that the tendency in modern organizations of a thoughtful character is to recognize an executive as a type and endeavor to offer him facilities for his natural development.

Perhaps the best basis for this development is a broad technical or engineering training that has given the individual knowledge of fundamental scientific laws and truths that fits him for the rapid analytical consideration of the many problems that come before the executive and enables him to reach his decisions in accordance with the demands of fundamental laws. The qualifications for success require that he have a natural ability to make a happy application of principles to the immediate pressing and transitory problem.

We find these two types in all professions and human activities and at all stages and levels thereof, by which I mean that they are not confined to industrial organizations alone. For example, we have lawyers of the legal engineering type whose success rests upon their technical knowledge of the law and who approach a legal problem very much as an engineer approaches an engineering problem. In the same way we have lawyers who are of the executive type, whose success rests upon their ability to handle a case in court with the material furnished them by the legal engineer. In recognition of this principle we find successful modern law firms to be made up of the two types, both of which are generally recognized in the membership of the firm.

In the medical profession we find the same condition to exist. We find medical engineers engaged in scientific study, research and diagnosis, and medical executives engaged in the application of medical and surgical laws to a vast number of current cases, or medical executives engaged in the management of sanitariums and hospitals.

Similarly in shop life in industry we find workmen of the engineering or technical type who are qualified to study and invent or develop the processes by which a mechanical problem may be solved, and workmen of the executive type who take the mechanism developed by their technical or engineering associates and apply it to the routine work of production.

When we come to consider the performance of work in an

abstract sense, we recognize two broad steps, namely: planning and execution; and these two steps correspond to the two broad types of men, the engineering type and the executive type.

Planning is a function of an engineering order, and execution is a function of an executive order.

In military organization this distinction is recognized in the staff and the line. The ambitious plans of the German general staff are responsible for the late terrible struggle. These were revealed to us through the cold-blooded, relentless, cruel execution of these frightful policies by the German line.

Staff work and engineering work grow in importance with the complexity of the problem. As the problem becomes more and more complex it becomes more and more difficult for those concerned with the development of the plan to devote their time and energies to its execution; and, in turn, for those concerned with its execution to devote their time and energies to the formulation or development of the plan.

A study of any phase of the operations of the late war will show the increased importance in modern warfare of the staff or planning department, and the disposition to separate execution or production from planning. This was evidenced in the wide separation of the general from his command, and in the direction of large units by mechanical means of communication rather than through personal direction heretofore possible in smaller and less intricate fields of military operation. The modern army is nothing more than a very large industrial organization and its size and complexity has led to the same analysis and division of work among engineers and executives as has taken place in modern industry, and allowance need only be made for the difference in nomenclature in military and industrial practice to follow through the analogy.

This difference in engineering and executive types is further reflected, though in a somewhat different way, in the distinction between specialists and functionalists.

A specialist is one who deals with a particular product or a particular class of work; so we have gun specialists, cartridge specialists, forging specialists, drilling specialists.

A functionalist is one who deals with a particular function or activity or step in the performance of work regardless of the

specialty to which it refers. He plans the work or executes the work and is theoretically not concerned with whether that work produces guns or cartridges, forgings or castings. He is prepared to carry on his activity in connection with any specialty. The functionalist is concerned more with the type of his work than with the material result or product of his work. He performs one part of the task whereas the specialist performs the entire task.

The specialist is the natural outgrowth of the early development of industry. In the family organization each member of the family was assigned some specialty and these specialists finally organized the trades and the trade unions and, where we find these specialists working in the elementary state that obtained in the early days of the industry, we find them performing all of the functions in connection with their specialty. Carpenters and shoemakers, as a one-man organization, work very much today as they did a hundred years ago, but where the shoemakers have congregated to form a modern shoe factory, it becomes necessary not only to specialize the product, but to specialize the processes and one man no longer makes a pair of shoes completely, but he performs repeatedly merely a single process in connection with the manufacture of shoes.

And in turn, the problem of management has become so complex in connection with these groups of specialists that it has become necessary further to simplify the work by dividing it into functions or steps in order to bring it within the range of average individuals who can be found in sufficient number and to adapt it to the special talents of individuals whose powers are more developed in one direction than another. Functionalizing is, therefore, the natural outgrowth of the complexity of modern industry. It is in effect specializing the process of management.

Since the function is merely a step in the work to be done, merely a part of the whole work, it is a part of all work and is, therefore, universal in its application without reference to the specialized product or process.

We have noted that functionalizing is necessary in order to bring the work of management within the grasp of the individuals available and within the range of their talents. Hence, functionalizing should be along psychological lines, that is, the work

should be divided in such a manner as to employ the talents of the different psychological types.

Men having the character and qualifications to undertake the entire activity of management of any particular specialty are not available in sufficient number to fill all of the positions necessary. As the combination of specialists becomes more complicated, the problem of management becomes correspondingly complicated and we are accordingly in need of functionalization even among men capable of handling a multitude of specialties.

We have developed the fact that the functions should be universal and applied to all specialties and, at the same time, follow psychological lines and require for their performance distinct psychological types. Furthermore, the functions should be elementary in that the analysis be carried far enough to determine the elements of the work and to call for an elementary psychological type.

A wide difference of opinion and practice exists as to the determination and definition of the various functions. It does not seem necessary at this point to set up any arbitrarily determined set of functions, but merely to say that the functional activity in connection with any class of work should be carefully analyzed and such functions determined as will completely perform that work, if they in turn are completely performed. Conversely, of course, the work will fail to be performed if any function is not performed. This is in effect dividing the work into steps.

The broad functions of planning and production are generally recognized. Planning is the determination of what is to be done. For this purpose a planner should be analytical, have reasoning power, imagination, be able to dissect, to break the task down into its elements. He should be synthetical, that is he should have the power to draw these elements together, to build up and to construct the whole out of its elements. Production is the application of force through the plan. A productionist should be forceful, aggressive, driving, tenacious, persistent, able to control men, to direct them, to guide and to lead them.

Psychologically, these correspond to the engineer and the executive, and the fault most commonly found in modern organizations of a low order of efficiency is that they neglect the planning or engineering function; and the fault most commonly found

in modern organizations of the so-called systemized kind is that the planning function has been too much elaborated and the production function too much subordinated.

There is a very great danger in endeavoring to establish arbitrary determinations in this matter as laws for universal guidance. Each situation requires careful study and thought to the end that there may be a proper balance of emphasis upon the different functions.

Different emphasis will require to be placed upon the various functions under different sets of conditions; in one instance the planning function will require to be emphasized and in another the production function. For example, in a jobbing shop where each job differs from others it is necessary to pay particular attention to the work of planning, to study it with the best talent available and to record the results of such study in the form of instruction to producers. In this manner the work of production will be standardized, controlled and simplified and the work of planning will produce its own reward.

On the other hand, in a manufacturing shop where work is of a highly repetitive character and a large volume of similar articles flow in a stream the work of planning becomes standardized, growing out of the original engineering plan, and men can be selected and assigned to it accordingly. In such a situation, emphasis will require to be laid upon the production function in order that the continuous flow and the volume of production may be maintained, and the one selected for such a task should have the psychological characteristics of the typical productionist.

Similarly in selecting or determining other functions than the two main functions of planning and production, it is necessary to give careful consideration to the existing conditions and to determine the extent to which further elaboration of functions is necessary or desirable. Too great elaboration of functional control has cast some discredit upon many modern organizing and systematizing efforts. The organization should compare in simplicity with the problem and where the problem is of such a complex nature as to require a greater elaboration of functions, the functions should be determined and defined along psychological lines; that is, they should require for their fulfillment distinct and simple psychological types and the number of positions or

functions requiring a complex psychological type should be kept within the range of the human talent available. Talent of a low order may require a more complete functional analysis and talent of a high order may make possible a simplified functional control in which a number of elementary functions are combined under the supervision of a single individual capable psychologically of their composite comprehension.

If the problem is simply routine it should not be burdened with an office or shop organization and system that is complex. If the product is flowing continuously for a long period of time we can afford to devote the best talent available to development of the original plan of work by elaborate engineering, research, survey and investigation. Such a plan may call for elaborate and expensive equipment of a fixed nature devoted to narrow and particular purposes and the operation of such equipment may be of such a fixed nature as to require the most simple kind of organization and system, having no other function than to keep this equipment operating in a rigid routine way. The planning function in such an instance is embraced in the original plan of work and the production function is reduced to one of routine repetitive performance.

We find such a situation to exist today in a number of our automobile factories where they have worked continuously on one model of car for a period of years with little or no change in design, or no change in design radical enough to require a change in equipment, and where the production has been in sufficient volume to pay for most expensive and elaborate production equipment and methods. In such a situation the management becomes largely mechanical and lacks the interest that arises from a situation in which a new problem is presented every day and in which each new problem requires a different combination or sequence of utilization of facilities available and therefore a new and distinct plan of work and a constantly changing character of supervision in a productive sense. It would seem that the management problems under these latter circumstances are of a higher order and call for a higher order of engineer and executive in an operating sense.

Our conclusion is that we should build as strong as we require, but that we should not overdo it. We should not put in organization and system for the sake of it. We should make it utili-

tarian—adapt it to conditions. We should not have people about for the purpose of carrying titles or receiving salaries, or conforming to an arbitrary, rigid type of organization, or for the purpose of interpreting an unnecessarily elaborate system. The simplicity of the problem should be reflected in the simplicity of the organization and system, and complex organization and system should be resorted to only where the complexity of the problem demands. The ultimate cost of administrative effort is a measure of the adaptability of the organization and system to the problem. Modern business demands of managers and management mechanisms, or organizations and systems, higher efficiency and lower costs.